

PRODUCTS

A collection of various HVAC products including radiators, coils, and units. The products are arranged in a collage-like fashion against a dark background. At the top left, there is a vertical stack of components including a pressure gauge, valves, and a small pump. Below this, several large rectangular radiators with multiple fins are shown. To the right of the radiators, there are several smaller, box-like units, some with doors open, revealing internal components like coils and fans. In the bottom right corner, there is a larger, more complex unit with multiple sections and a control panel. The overall image is a black and white photograph of various mechanical parts.

Heating Cooling *and* Air Conditioning

PRODUCTS

BULLETIN NO. 290
NOVEMBER 1937

A Guide to **TRANE** Products

EACH UNIT PERFORMS IN THE FUNCTION CHECKED

UNIT	Heat- ing	Cool- ing	Humid.	De- humid.	Vent.	Air Cleans- ing	Page
Specialties	×						3
Extended Surface Coils	×	×		×			4 & 5
Convectors	×						6 & 7
Unit Ventilators	×				×	×	7
Unit Heaters	×				×		8 & 9
De Luxe Air Conditioner	×	×	×	×	×	×	10
Commercial Air Conditioner	×	×	×	×	×	×	11
Hotel & Office Air Conditioner	×	×		×	×	×	10
Climate Changer	×	×	×	×	×	×	12 & 13
Comfort Cooler		×		×	×	×	14
Evaporative Condenser		×					13
Railroad Evap. Condenser		×					14
Sub Cooler		×					14
Product Cooler		×					14
Air Washer			×	×		×	14
Pumps	×	×					15
Temperature Control Valve	×						15
Spray Nozzles		×	×			×	15

TRANE

THE TRANE COMPANY, LACROSSE, WISCONSIN

For **EASY REFERENCE**

The information contained in this bulletin on the various Trane products is meant to be helpful to you in making a quick review of basic equipment in the heating, cooling, and air conditioning fields. The Trane products shown have varied applications. The list is impressive, but far from inclusive. These products are available in a great variety of sizes and styles. On each page of this bulletin, you will find a reference note indicating the proper bulletin for more complete information on the line described on that page. On page 16 you will find an additional list of Trane literature.

A Complete **UNDIVIDED RESPONSIBILITY** Line

For many years, The Trane Company has directed its entire inventive and production efforts to develop individual equipment that would perform under working conditions in a manner satisfactory to the engineering consultants and contractors in the various fields whose task it is to assemble this equipment into a working system. Throughout these many years, The Trane Company has maintained a reputation for designing and manufacturing related equipment—equipment designed and developed together for service together.

This development work has carried The Trane Company into a position of responsibility in the advanced cycles of heating, cooling, air conditioning, humidifying, dehumidifying, ventilating, and air washing. Considered separately, each of these activities covers vast territory; collectively, they become—Air Conditioning.

Thus, The Trane Company's work with many factors involved in air movement, air control, the use of air for any degree of comfort, has placed The Trane Company in the forefront of all manufacturers of equipment necessary for the furtherance of the user's satisfaction.

The complete line of Trane products, including Heating Specialties, Blast Coils, Cooling Coils, Unit Heaters, Convectors, Unit Ventilators, Evaporative Condensers, Comfort Coolers, Product Coolers, Pumps, and a great variety of Air Conditioning equipment has been developed with one purpose in view—to aid the contractor, engineer, and architect in building and specifying working systems. There is always the proper Trane product to do the work. Purchasers will have a complete installation using the products of one manufacturer—thus enjoying the protection of undivided responsibility.

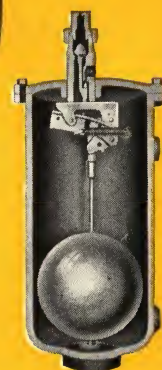
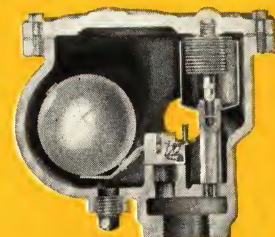
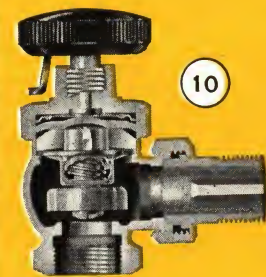
TRANE

Heating Specialties

(Bulletin V260)

Engineering skill and advanced manufacturing methods enable The Trane Company to build Heating Specialties which stand up under rigorous operating conditions, yet are sensitive enough to function with the utmost precision. Trane has exactly the specialty needed to give longer life, create a definite saving, and assure positive heating satisfaction. Trane Traps have been tested by the U. S. Bureau of Standards and are approved by all Government Departments.

1. The Trane Balanced Pressure Bellows—of multiple corrugated, one-piece construction, are truly the heart of Trane Traps and Vents. Their operation, as an integral part of Trane Heating Specialties, is an important feature in the function of these Specialties. Their precision manufacture and balanced pressure account in a large measure for the long life and dependable operation of Trane Heating Specialties.
2. Low Pressure Bellows Angle Trap—15 Lbs. maximum pressure. Accurate performance. Maximum sensitivity. Ball-tipped plunger closes tightly. Self cleaning, sharp-edge, seat at low point in body.
- 2a. Low pressure Bellows Offset Trap—for straightway and right or left hand corner installations.
- 2b. Low Pressure Bellows Vertical Trap—for direct connection to bottom outlet of convectors.
3. High Pressure Bellows Trap—100 Lbs. maximum. Corrosion resisting. Durable. Special metal in seats and plungers to withstand severe service.
4. Medium Pressure Bellows Trap—50 Lbs. maximum pressure. Permanent. No adjustment required. Special alloys for all parts subject to wear.
5. Thermostatic Drip Traps—15 Lbs. maximum pressure. Extra capacity. Compact. Highest quality demonstrated through years of service.
6. Float Vent—20 Lbs. maximum pressure. Quick air venting—water and steam tight. Oversize float and discharge orifice. Vacuum seal.
7. No. 1 Quick Vent { 20 Lbs. maximum pressure. Large capacity through 1/4" venting port. Genuine
8. No. 2 Quick Vent { Trane balanced pressure bellows. Steam tight, ball-tipped plunger. Vacuum seal.
9. No. 9 Vent Trap—Huge air capacity. Double acting all brass mechanism, non-thermostatic.
10. No. 44 Hermetic Angle Valve—Unexcelled simplicity. Truly packless—leak proof. Easy operation. A reputation for service without maintenance expense.
11. Bellows Angle Valve—Truly packless—leak proof. Non-rising stem.
12. No. 30 Angle Valve—Sturdy—commercial packless construction. Double protection against leakage around stem.
13. Series "A," "C" & "H" Float Traps—Available for low or high pressures. Unique float mechanism assures extra capacity. Protected bellows.
- 13a. Exterior view of Series "H" Float Trap.
14. No. 210 Direct Return Trap—20 Lbs. maximum pressure. A safety device—automatically returns condensation to boiler. Positive, noiseless operation.
15. Inverted Bucket Trap—A heavy duty trap, extremely long life. Silchrome steel wearing parts withstand severest service.
16. Compound Gauge—Sensitive Bourdon movement. Large readable figures. 30" vacuum, 30 Lbs. pressure.
17. Dirt Strainer—12 mesh brass wire screen. Prevents dirt from interfering with operation of equipment. Easily cleaned.
18. Damper Regulator—Automatically positions draft and damper doors to maintain uniform pressures. Maximum recommended pressure—2 Lbs.



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TRANE

Extended Surface

Heating and Cooling Coils

Many are the reasons for the superiority of The Trane Extended Surface Coil. It is light in weight, compact, and space saving. It has a higher heat conductivity. It requires fewer piping connections. It has lower friction.

Round seamless tubes of pure copper are normally furnished. To meet definite conditions, tubes are, on occasion, made of red brass or other materials. In all sections of more than one row, the tubes are staggered to provide an even distribution of the air over the heating surfaces.

Flat, plate type fins constructed either of aluminum or copper are used on all standard Trane Coils. A spacing collar is formed at each tube opening and is drawn to the proper height to provide the required standard fin spacing. Each fin is continuous across the entire width and depth of the coil section, and these fins are mechanically bonded to tubes by a special expanding process which makes them permanent, integral parts of the tube. Each Trane Coil is thoroughly tested in accordance with rigid Trane standards before shipment.

No matter what the application, commercial or industrial, a Trane Coil can be supplied to meet the requirement.

TYPES "E" & "C" (Bulletin 152)

Trane Type E Blast Coils are for heating and ventilating applications using steam or hot or cold water. Headers are close-grained cast iron, accurately machined and tested. Flanges are drilled for easy attachment to duct work. The entire core floats independently in the casing, automatically compensating for expansion. Red brass tubes are normally furnished where pressures higher than 25 pounds are desired; copper tubes are standard for lower pressures.

Type C Blast Coils are the same as Type E Coils, with the exception of the casing. Type C Coil casings are not drilled for duct connections and have no bolting flange around the headers. They are intended primarily for applications where they are built into a heating or cooling unit.

DIRECT EXPANSION (Bulletin 172)

The Trane Direct Expansion Coil embodies the same sturdy fin and tube construction as other Trane Coils—the dual contact between tube and fin, the correct ratio of secondary to prime surface. The major differences are special header construction and serpentine. A vertical bronze header automatically distributes the gas in equal amounts to each tube in the circuit. Even temperatures over the face of the coil are achieved. Trane Direct Expansion Freon Coils are tested and are listed in accordance with the requirements and specifications of the Re-examination Service of Underwriters' Laboratories, Inc. Each coil carries the Underwriters' Laboratories Reexamination service marker.

TYPE "S" (Bulletin V292)

The Trane Type "S" Serpentine Water Coils have been designed for use on cooling systems where

No. 1. Type "E" Trane Extended Surface Coil showing holes in casing for attachment to duct work. Types "E" and "C" handle steam or hot or cold water and serve both heating and cooling purposes.

No. 2. The Trane Direct Expansion Coil is the ideal choice when a direct expansion refrigerant is used for cooling.

No. 3. Trane Welded Header Coil—for high pressures or superheated steam. No. 4. A Four-Row Type "S" Single Row Serpentine Coil showing U-bend connections. No. 5 shows the Type "S" cast iron header arrangement. The Type "S" Coil is especially designed for water cooling.

No. 6. Type "R" water cooling coil. (A)—Opposite end of coil with cover plate in place. (B)—Cover plate removed to show tube arrangement. Type "R" is the correct selection where it is necessary to occasionally clean the tubes.

clean chilled water is used. The Type "S" is available in two models—the single-row serpentine and the two-row serpentine. The former is ideal where water quantities are limited, while the latter is the choice when an ample water supply is at hand. They eliminate space-consuming special fittings and piping inter-connections.

WELDED HEADER COILS (Bulletin 162)

The particular requirements of special drying equipment call for a coil of special design and construction. Trane meets these requirements with the Welded Header Coil. This coil may be used where there are steam pressures up to 350 pounds, or where superheated steam is encountered. It embodies welded headers of heavy copper tubing. The casings are of 14 and 16 gauge galvanized steel. Drilled flanges are provided on all sides for duct work attachment, and for bolting sections together in multiple groups. Round seamless pure copper tubes of 3/4" O. D. are used in all Welded Header Coils.

TYPE "R" (Bulletin 182)

With the same fin and tube construction as the other Trane Extended Surface Coils, Type "R" has a special header design which facilitates making multiple coil assemblies. In applications where it may be necessary to clean the tubes occasionally, the end plate can be removed from the coil opposite the piping connections and easy access to the tubes secured. The gasket assures a perfectly tight joint when the plate is placed back in position.

TRANE BOOSTER COILS (Bulletin V252)

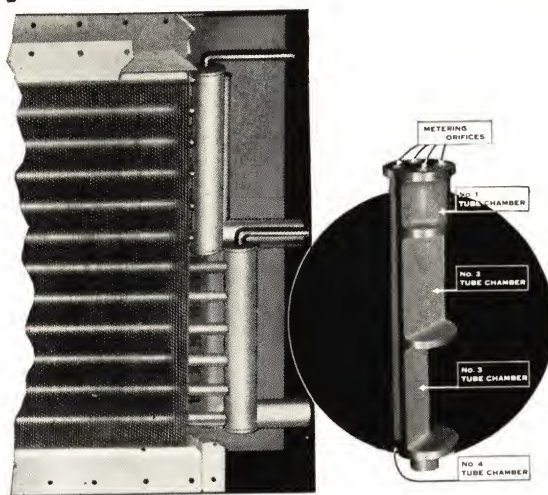
The compact Trane Booster Coils are ideal for booster type heating, ventilating, and air conditioning systems where air is heated in a central equipment room and then distributed throughout the building. A Booster Coil installed in each branch duct may be regulated by room thermostats and thus provide independent temperature control in the various rooms.

RANGE OF COIL SIZES

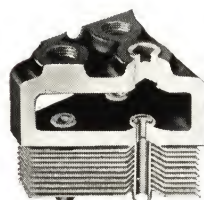
Coil	From	To	Series*	Number** of Sizes and Combinations	Standard Widths	Service
Type "C"	12" x 12" 1-Row	30" x 120" 2-Row	45, 75, 85 (Water Coils in Series 85 Only)	594	12-15-18 21-24-30	Heating and Cooling
Direct Expansion	12" x 24" 2-Row	32" x 120" 6-Row		330	12-16-24-32	Cooling with Refrigerant
Type "S"	18" x 18" 2-Row	30" x 120" 6-Row		225	18-24-30	Cooling with Water
Welded Header	12" x 12" 1-Row	30" x 120" 3-Row	45, 75, 85	945	12-18-24-30	High Pressure Heating
Type "R"	24" x 24" 4-Row	30" x 120" 8-Row		105	24 & 30	Cooling with Water
Type "E"	12" x 12" 1-Row	33" x 120" 2-Row	45, 75, 85	616	12-15-18-21-24-30-33	Heating
Booster Coil	6" x 12" 1-Row	10 1/2" x 72" 2-Row	45, 75, 85	284	6-7 1/2-9-10 1/2	Heating and Cooling

*Series Number indicates number of fins per lineal foot of coil.
**Standard length. There is an infinite variety of intermediate lengths.

Special Features



Above is a sectional view of a Trane Direct Expansion Coil showing the header arrangement. Inset shows the vertical bronze distributor header which automatically meters the gas in equal amounts to the tube circuits.

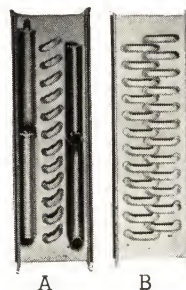
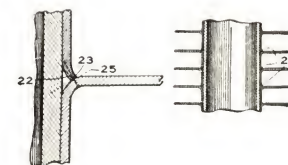


At left: A sectional view through the header of a Trane Extended Surface Coil. Note the cut open tube showing tight fit of extended fins to tube and orifice distribution bushing.

Right shows a typical fin for 18" 2-row Blast Coil showing spacing collars. Each fin is continuous across the entire width and depth of the coil section, thus exposing only smooth edges to air travel with a consequent minimum of air friction.



The diagram at the right illustrates the details of the dual contact and method of applying fin to tube. The fins are mechanically bonded to the tubes by a special expanding process which makes each fin, in effect, a permanent, integral part of the tube. No solder, brazing, or welding process is necessary.



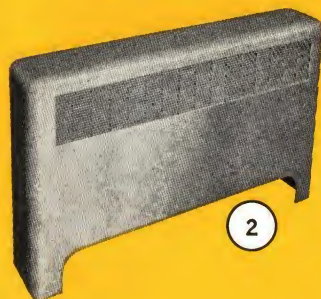
At the left are two typical header arrangements on standard serpentine design of Direct Expansion Coils. Figure (a) shows Liquid (left) and Suction Headers. Return U-Bends are illustrated by Figure (b).



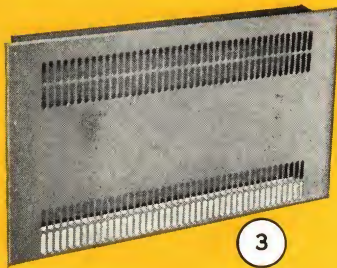
At right above are Header views showing removable clean-out plugs on one row and two row coils. This arrangement is the same on both Type "C" and Type "E" coils.



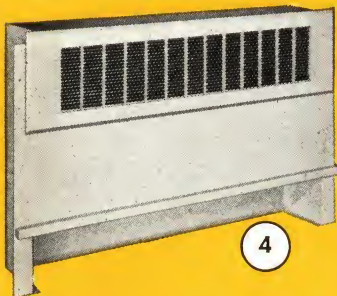
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3



4

TRANE *Convectors*

(Sales Bulletin 110, 268, 105 and 266. Data Bulletin V205)

The Trane Non-Ferrous Convector—modern successor to the old-fashioned cast iron radiator—provides instant, even heat to any room space. Constructed in fifteen basic types, the Trane Convector may be placed on the floor, partially or totally concealed in the wall, or hung completely exposed on the wall. The Trane Convector operates successfully on all types of steam and hot water heating systems.

No. 1. Type FK Convector with Double-Formed grille and damper.

No. 2. Type FK Convector with Free-flo Grille. An exposed model, ideal for new or remodeling installations. Only slightly different is the Type FG which has an inlet grille at the bottom of the cabinet.

No. 3. Type RG Convector for installation in wall recesses. Either Free-flo or Double-Formed outlet grilles may be used. Also available without inlet grille.

No. 4. Type PK Convector. All of the unit except the grilles is hidden in the wall. Throat extension allows for the use of plaster, tile, or panel walls. Also obtainable in a PG Type having inlet grilles.

Not shown is the Type W, a wall cabinet that is easily hung between window apron and baseboard or on a blank wall. Other types include: The SK, with a semi-recessed cabinet, the exposed corners of which are rounded. The SG, also semi-recessed, utilizes an inlet grille. The PKF and PFG, to be plastered in an insulated opening. The MKL and MGL, consisting only of the heating element and a front panel. The MKR and MGR, consisting of the heating element and a front panel to give a semi-recessed appearance.

Trane Convectors with the graceful rounded corners on the exposed units lend beauty to their surroundings. With Trane Convectors the architect is given a tool that allows him complete freedom in his quest for symmetry and pleasing design.

Instantly responsive to changing heat requirements, these trim units require only the turn of a valve or adjustment of a damper. Comfortable heat is immediately delivered to every corner, preparing the room for immediate occupancy. Just as easily is the command to stop heating given. Only by nature's own laws of convection and the high conductivity of non-ferrous metals is this quick, positive heat possible.

Dust and dirt are not deposited on walls and expensive drapes where Trane Convectors are used. Trane Convectors are clean. They circulate the air down to the floor and out into the rooms where it brings true comfort to the occupants.

Even heat throughout the room prevents draft. No wide range of temperature is found between floor and ceiling. The child playing on the floor is safe from unhealthful effects of improperly heated rooms.

CONDENSED CAPACITIES AND RANGE OF SIZES

SIZES:

Five Depths— $3\frac{5}{8}$ ", $5\frac{5}{8}$ ", $7\frac{5}{8}$ ", $10\frac{7}{8}$ " and $14\frac{7}{8}$ ".

Ten Lengths—From 14" to 60" inclusive.

Nine Heights—From 18" to 38" inclusive.

CAPACITIES:

Range of 7.5 to 148.5 square feet.

TYPES:

Fifteen basic types including concealed, recessed, semi-recessed and exposed models.



6



ECONOMY

The initial cost of Trane Convector is surprisingly low. Light weight and scientific design keeps installation expenses at a minimum. Only simple piping connections need be made by the contractor. Trane Convector may be placed in existing buildings as easily as they may be included in new building plans.

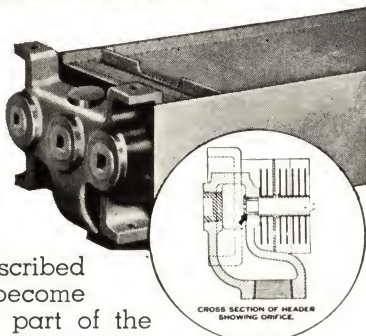
Because of instantaneous response, Trane Convector economize on heat. No valuable heat is wasted by opening windows to cool an overheated room. No chilly wait for a room to warm up. No valuable heat radiated into walls to be dissipated to the outside. Trane Convector direct the heat to the living zone. No valuable heat wasted through stratification at the ceiling. Trane Convector keep the air in gentle circulation. Fuel is saved. Comfort is assured.

CASING CONSTRUCTION

The Trane Convector is light in weight yet strongly constructed. The casing is made of highest grade furniture steel. Scientifically designed grilles effectively mask the interior while providing effective distribution of heat. Because of its compact construction, valuable space is economized to be used for other purposes.

THE CONVECTOR ELEMENT

The heart of the Trane Convector is the Trane Non-Ferrous Heating Element. It consists of copper tubes to which by a patented process, non-ferrous metal fins are joined, as illustrated and described on page 5. The fins become in effect an integral part of the tubes thereby giving a perfect heat transfer unit. Tubes are rolled into cast iron headers in boiler tube style insuring against leaks. The heating element is guaranteed to withstand pressures up to 150 pounds per square inch.



FORCE-FLO CONVECTOR

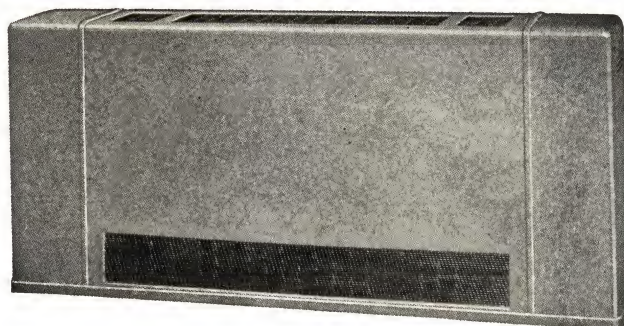
The Trane Force-Flo Convector makes use of a standard heating element together with a motor and blower assembly all enclosed in a beautiful cabinet. Cold air is drawn from the floor by a quiet-operating blower fan, discharged over the heating element where it is warmed by convection, and then circulated quietly but positively out into the room. A small unit, it delivers a relatively large quantity of heat. Ideally suited for showrooms, lobbies, stores, and corridors where space is at a premium.



TRANE

Unit Ventilators

(Sales Bulletin 65. Data Bulletin V230)



THE TRANE AIR-O-LIZER

The Trane Air-O-Lizer is an outstanding unit ventilator. Designed to meet all state and local requirements for heating and ventilating in the school-room. Proper mixtures of outdoor and recirculated air are heated by Trane No-Draft Heating Coils. Durable dampers may easily be adjusted to give any desired mixture of air. Either automatic or manual control of heat and dampers may be used. Pure filtered air is gently discharged in the room by quiet blowers.

The Air-O-Lizer attractively fits into any room design. Rounded corners not only add to its beauty but protect children from painful injury caused by falling against sharp corners. Completely enclosed, inquisitive fingers cannot venture within the cabinet, yet the cabinet front is easily removed by simple key arrangement for filter cleaning and motor oiling.

Strongly constructed and thoroughly sound-proof, the Air-O-Lizer is available in a variety of sizes to meet all requirements.

SERIES "A"

Constant Amount of Outdoor Air

Air-O-Lizer C. F. M.	Air-O-Vent C. F. M.
750 to 1,560	2,000 to 6,000

SERIES "B"

Variable Amount of Outdoor Air

Air-O-Lizer C. F. M.	Air-O-Vent C. F. M.
750 to 1,560	2,000 to 6,000

SERIES "C"

Variable Quantity of Outdoor Air with a Fixed Minimum

Air-O-Lizer C. F. M.	Air-O-Vent C. F. M.
750 to 1,560	2,000 to 6,000

THE TRANE AIR-O-VENT

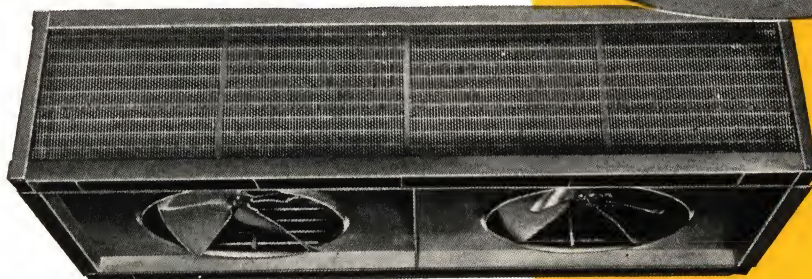
A large capacity unit ventilator, the Air-O-Vent is particularly adapted for use in auditoriums, gymnasiums, or other places where many people assemble. Two types, horizontal or vertical, are available in either bare or complete units.



TRANE

Unit Heaters

The Trane line of unit heaters—the most complete commercial range available—has been amplified to include two distinctly different units—new in appearance and revolutionary in method of operation, known as—



The Trane Projection Unit Heaters. The Multiple Unit at left. Above: the circular single fan unit.

PROJECTION HEATERS

(Bulletins 284 and 294)

The Trane Projection Heater and the Trane Multiple Projection Heater are compact, light weight, easy-to-install unit heaters of the propeller type. Both of these units have the same operating characteristics, the same advantages, and they successfully embody a new way of carrying and diffusing a vertical heated air stream with a maximum of floor coverage. Designed for high ceiling mounting where they are out of the way and also for low ceilings where head room is limited. With these projection type unit heaters the warm upper air is **drawn through** the coils and then projected straight downward to the floor by the new Trane four blade propeller fan especially designed for silent operation. The air stream, at an initial high velocity, induces a large volume of room air in its downward course, and reaches the floor at a negligible velocity with a tendency to spread and create a true comfort zone.

The Trane Multiple Projection Heater consists of two Trane Extended Surface Coils contained within a sturdy metal casing. The Trane Projection Heater is a two-row circular coil mounted between two circular plates. The upper plate is the supporting backbone of the unit. The lower provides the fan orifice. The motors in Projection Heaters are mounted on resilient constructions, in the units, and out of the path of all heated airstreams.

The Trane Multiple Projection Heater combines the lightness, flexibility, and the moderate price of the propeller type unit heater with the long range delivery and large capacity of the heavier, more costly blower type unit heaters. It is a multiple fan unit with each fan under individual control at a substantial power saving. It is the ideal choice where a maximum of space must be heated with a minimum of units.

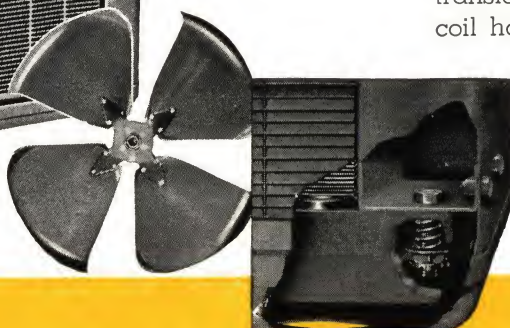
MODEL "N" UNIT HEATERS

(Bulletin 85)

The advantages of the unit method in all types of commercial and industrial heating have long been apparent.



The attractive Trane Model "N" Unit Heater incorporates such refinements as the "Cradle Coil" and the new quiet and efficient four blade propeller fan.



In the practical Model "N" line of Trane Unit Heaters, embodying such refinements as the "Cradle Coil" and the new "Free-flo" Grille, there are over sixty different standard styles and sizes with the most complete range of capacities commercially available. The "Cradle Coil" eliminates the rigid connection between coil and casing and is insurance against stress and strain caused by expansion.

The well known Trane Extended Surface Heating Coil, described on page 5 of this bulletin, is employed as the heating element in all Trane Unit Heaters—both propeller and blower types. The high heat transfer qualities and the durable construction of this coil have made it a favorite with heating and air conditioning engineers everywhere.

Trane Unit Heaters can be used for either steam heating at pressures up to 150 pound, or on positive circulation hot water heating systems where water temperatures are 160° or higher.

TORRIDOR UNIT HEATERS

(Bulletin 75)

The Trane line of unit heaters is rounded out by a wide variety of blower types — Trane Torridors. The Torridor is designed for large space heating with a minimum of units. Because of their high velocity characteristics they are popular for duct work applications, and are unexcelled for floor installations where the discharged horizontal air stream must be carried to considerable distances. The Torridor is ideal where outside air must be introduced through ducts. Trane Torridors are built in floor, ceiling, and wall models.

These units are available in either direct drive or belt driven models. The belt driven models are more frequently used because of their many operating advantages and their increased flexibility.

BUILT FOR PERMANENCE

Trane Torridors are built for long and constant use. The casing is constructed of high grade steel, spot welded to heavy angle iron frame work. The motors are of standard manufacture for blower type unit heater work.

Ball bearings are used on the drive shafts with all bearings out of the path of the heated air stream. The quiet, vibrationless, scientifically constructed Trane Forward Curved Blade Fan is employed. The patented Trane Guide Flange removes all expansion stress from coil tubes and headers. Every refinement of advanced manufacturing process and material is embodied in these practical units.

CONTROLLED HEAT DISTRIBUTION

To effect efficient and economical heating, air must be **directed**, not "dumped." The Trane Multiflector Grille is used to split up the air leaving a Torridor nozzle and direct its flow in either one, two, or three directions. With this simple, inexpensive device it is unnecessary to purchase split nozzles to secure special air deflection.

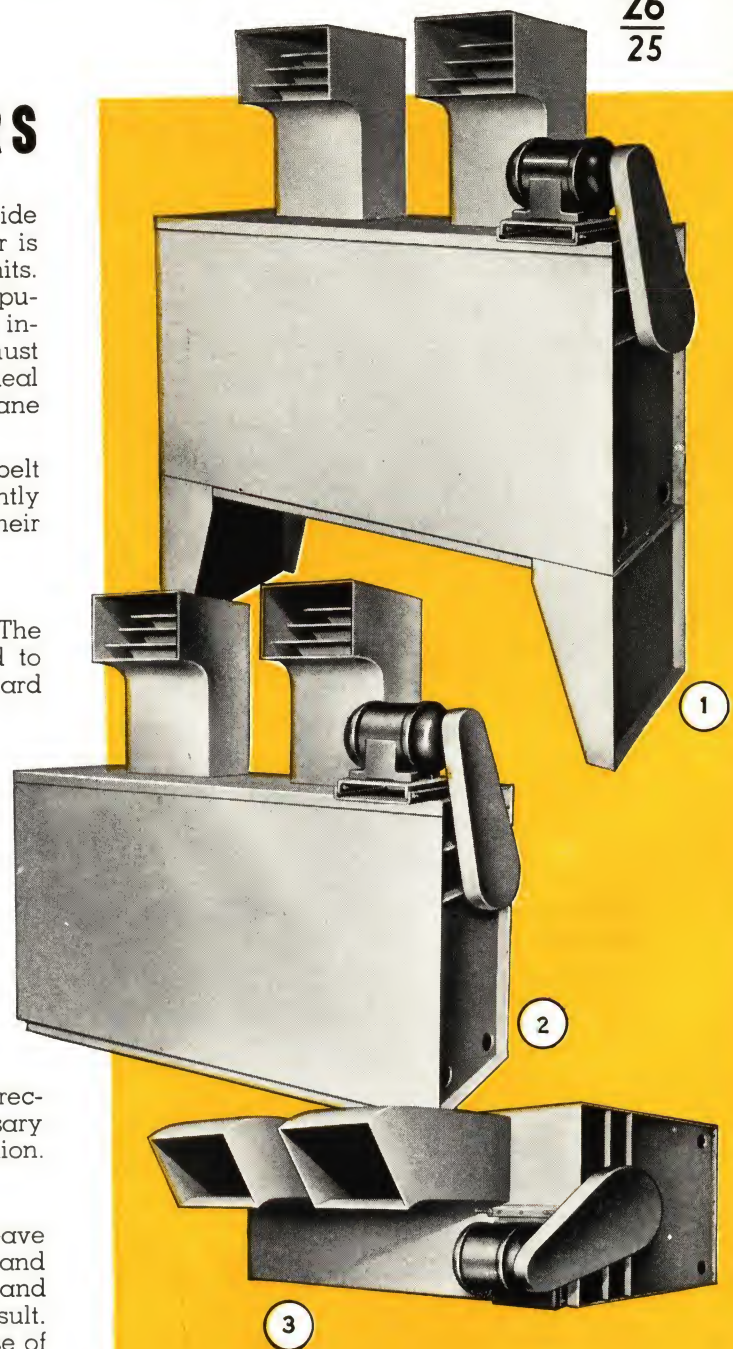
PERFORMANCE

Trane Torridors handle large volumes of air which leave the units at a low temperature normally between 120° and 135°. This is the ideal temperature range for both throw and diffusion, and a high degree of heating comfort is the result. Because of the flexibility of Trane Torridor design, the use of two or three outlet nozzles, and the directional flow features of the Multiflector Grille, a single Torridor frequently does work normally requiring two units.

TRANE TORRIDORS WITH BY-PASS CONTROL

Trane Torridors using the Thermaadjust system of control are fitted with a system of dampers which by-pass air around the heating coil when less heat is required.

In many types of installations it is desirable to keep constant the amount of heat discharged. The Thermaadjust system of control is widely specified by engineers for just such applications.



RANGE OF UNIT HEATER SIZES

Unit	B.t.u. Range*	No. of Standard Sizes	C.F.M. Range
Multiple Projection Heater	From 350,000 to 1,000,000	4	From 4810 to 13,750
Projection Heater	From 52,000 to 285,000	5	From 960 to 5,250
Model "N" Unit Heater	From 21,000 to 400,000	70	From 410 to 5,000
Torridor	From 134,200 to 1,287,000	72	From 1575 to 19,730

*Standard Steam Rating at 2 pounds steam pressure and 60° entering air temperature.



TRANE DeLuxe Air Conditioner

Sales Bulletin 235. Data Bulletin V271)

Attractive appearance is combined with outstanding Trane features in the DeLuxe Floor Type Air Conditioner to give the finest equipment for year around comfort.

The Trane DeLuxe Floor Type Air Conditioner is a styled piece of furniture that blends into the background of any interior design. The smart shop, the pretentious home, the store, and the office all are enhanced by the addition of this completely enclosed unit. Rounded corners conform to the trend of modern streamlining. Brown wrinkle enameled casing is standard. If preferred, a gray priming coat may be obtained for final finish on the job to match exactly the colors of the room.

Designed in several different cabinet sizes the DeLuxe Floor Type Air Conditioner may be obtained in many more additional capacities by varying the size of the coil.

Standard equipment includes the famous Trane Cooling Coil for use with direct expansion refrigerant, cold city or well water, chilled water or brine. Large blower type fans operate quietly to discharge large quantities of air through Trane Free-flo Grilles. Motors are especially designed for quiet operation. The fans are mounted on shafts supported by pillow block bearings and are belt driven.

Optional equipment includes removable throw-away or permanent filters, as well as the famous Trane Extended Surface Coil for heating with hot water or steam. Humidification is obtained with the Trane Target Type Humidifying Spray Nozzle.

CONDENSED CAPACITIES FOR LARGEST AND SMALLEST SIZES

Entering Air 80° D. B. and 50% Relative Humidity; Entering Refrigerant, either water or direct expansion, 40°.

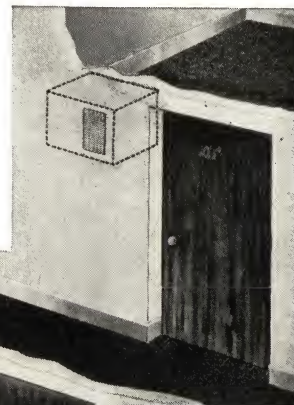
UNIT	C.F.M.	Water	Direct Expansion
From No. 52-2 to No. 122-5	300 2,500	9,600 Btu 129,000 Btu	8,200 Btu 97,000 Btu

HOTEL AND OFFICE AIR CONDITIONER

(Sales Bulletin 235. Data Bulletin V241)

A suspended unit, the Trane Hotel and Office Air Conditioner finds its greatest use in the hotel room and the small office space. It provides refreshingly cool air by means of the famous Trane Cooling Coil. Chilled water, cold water, or direct expansion refrigerants may be used as the cooling medium. Copper wool filters are optional. If cold water is used, hot water may be circulated in the same coil for winter heating. Fans are the quiet blower type direct driven by motors tested for balance and quietness. Casings are strongly constructed of 16-gauge furniture steel. Brown wrinkle enamel is the regular finish furnished on this unit.

The Hotel and Office Air Conditioner may be suspended in the transom or in an out-of-the-way corner of the room. Available in recirculating air, recirculating and corridor air, recirculating and outside air units.



CONDENSED CAPACITIES FOR LARGEST AND SMALLEST SIZES

Entering Air 80° D. B. and 50% Relative Humidity; Entering Refrigerant, either water or direct expansion, 40°.

UNIT	C.F.M.	Water	Direct Expansion
From No. 105-2 to No. 108-4	250 990	9,600 Btu 40,089 Btu	8,400 Btu 35,200 Btu



See also the Trane Model "X" Comfort Cooler, described and illustrated on page 14.

TRANE

Commercial Air Conditioner

(Sales Bulletin 235. Data Bulletin V234)

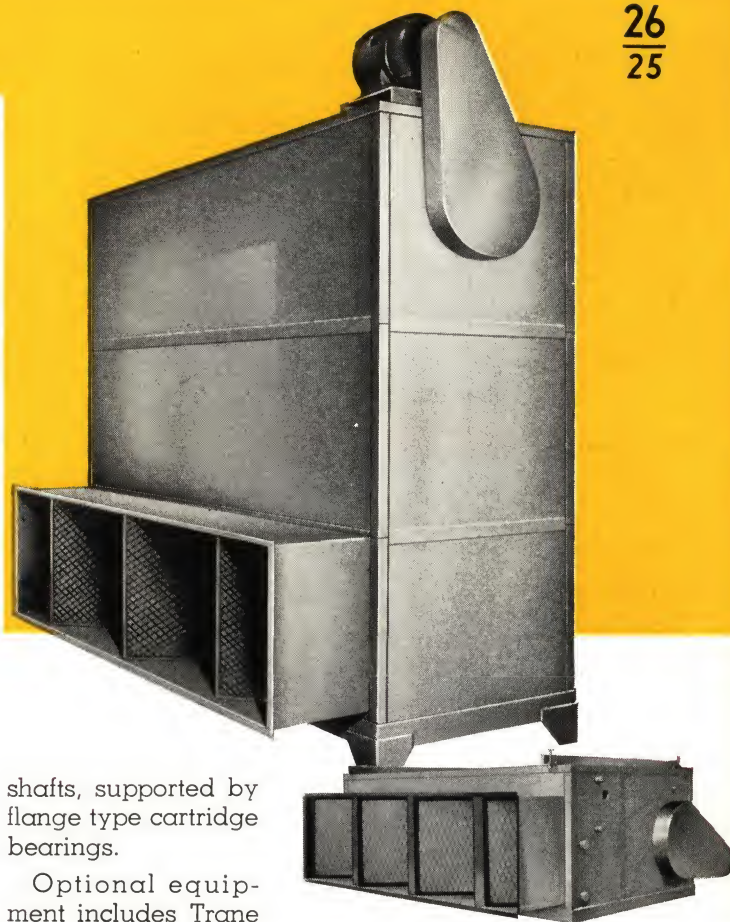
A Trane Commercial Air Conditioner houses in one compact unit all the equipment necessary to provide complete year around control of the air in any space.

Two models are available. The suspended model is intended for use where floor space is at a premium. By suspension from the ceiling, seldom used space is utilized without interference of any kind. Where it is not advisable to suspend the unit, a floor model is available that requires only the smallest possible amount of floor space. The floor model will fit in a convenient closet, service room or in a recessed opening in a corridor. The floor model comes knocked down in three parts ready for quick assembly.

By varying the size of the coil in the nine cabinet sizes a wide range of capacities is available.

The heart of the large Trane Commercial Air Conditioner is the famous Trane Cooling Coil. With slight variations cold water, city or well, chilled water or direct expansion refrigerants may be circulated in the coil to effectively cool and dehumidify. No matter how high outside temperatures soar the Trane Coil provides the temperature most suitable for comfort.

Large blower type fans, especially constructed by Trane, quietly draw large volumes of air over the coil, discharging and circulating it throughout the conditioned space. Fans are belt driven for closer adjustment of fan speed. Open type motors of standard manufacture are located out of the air stream in easily accessible positions. Fan assemblies consist of the fans mounted on highly polished steel



shafts, supported by flange type cartridge bearings.

Optional equipment includes Trane Extended Surface Coils for winter heat-

ing. Hot water or steam may be used. Filter sections using replaceable throwaway V Type Filters are available in special casings to remove dust and dirt from the incoming air. Non-clogging atomizing spray nozzles for economical and efficient humidification are also included when ordered. Provision may also be made at either the front or back of the unit for return or fresh air duct connections. The Trane Commercial Air Conditioner may use 100% recirculated air or 100% fresh air or any percentage combination of the two.

The entire unit is housed in a casing of 16-gauge finest grade furniture steel. Heavy angle iron frame rigidly supports the unit. The entire casing is insulated to prevent sweating and to eliminate noise, and then painted with gray primer. This allows the user to finish it on the job with matching colors.

Where partitioned spaces are to be conditioned the units, either floor or suspended models, may be used with duct systems. For large open spaces outlet nozzles are provided. With either arrangement the unit operates with the same effectiveness.

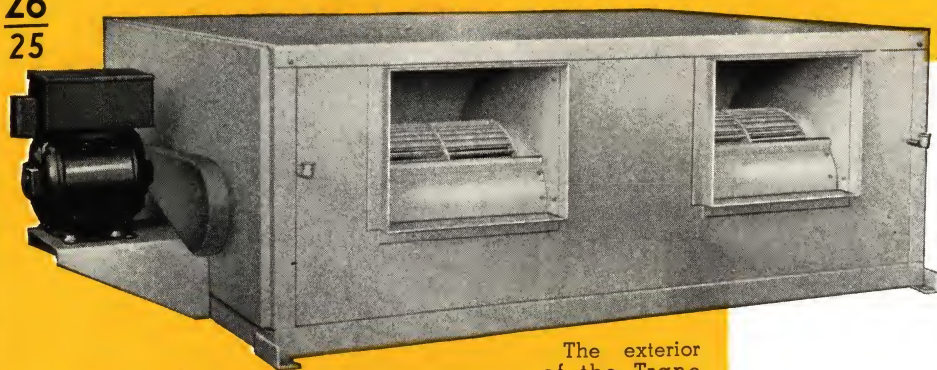
When ordered complete the Trane Commercial Air Conditioner furnishes complete air conditioning including Cooling, Dehumidification and Ventilation with Air Cleansing in the summer cycle, and Heating, Humidification and Ventilation with Air Cleansing for the winter cycle. The unit is equally adaptable to comfort or to process installation.

CONDENSED CAPACITIES FOR LARGEST AND SMALLEST SIZES

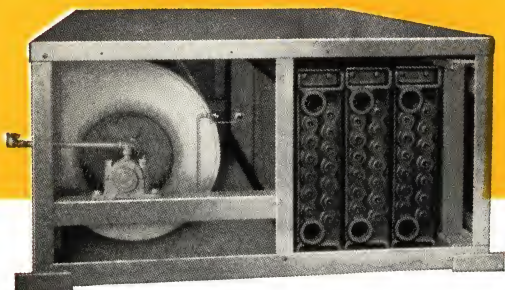
Entering Air 80° D. B. and 50% Relative Humidity; Entering Refrigerant, either water or direct expansion, 40°.

Commercial Suspended and Floor Model Units

UNIT	C.F.M.	Water	Direct Expansion
From No. 2203 and No. 2103	3,000	65,200 Btu	63,000 Btu
To No. 8212 and No. 8112	12,000	433,000 Btu	432,200 Btu



The exterior of the Trane Climate Changer is shown above. At right the side panel removed showing blower humidifier coils and filter.



The Trane Climate Changer—the complete year 'round air conditioning unit for the home, apartment and small building. It may be used with either hot water or steam systems for effective winter heating. Any standard cooling medium may be used to create refreshing, invigorating atmosphere during scorching summer days.

The Trane Climate Changer is a substantially constructed unit, made for long life. It may be located in the basement of the home or placed in a convenient closet in the apartment. (In many instances existing duct work may be utilized.) Because of careful designing for easy access to interior parts, installation is simplified. The casing bottom is fabricated of 12-gauge steel amply insulated and water-tight. Sides and top are of 16-gauge steel with rigid framework for strong construction.

In winter operation, famous Trane Extended Surface Heating Coils are used. If water is used as the cooling medium, the same coil can be used for heating and cooling. Summer dehumidification is accomplished by the coils to furnish complete comfort cooling.

Replaceable viscous type air filters cleanse the air of bacteria-laden dust and dirt. Construction is such that filters may be easily removed.

In winter the Trane Climate Changer guards the occupants of the building against colds and nasal irritations with proper humidity. The Trane Target Type Spray Nozzle scientifically moistens the air.

TRANE

Climate Changer

(Bulletin 230)

Large Trane Blower Fans operate quietly to force a huge volume of conditioned air in the duct work for perfect distribution to every nook and corner of the building.

A wide range of capacities allows the Climate Changer to fit many applications. One easily-selected unit will air condition the average home. In larger buildings, a Trane Climate Changer may be installed on each floor.

INDIVIDUAL APARTMENT AIR CONDITIONING

With the Trane Climate Changer, the apartment house field has at last found a unit to fit its exacting needs. With each apartment equipped with a Climate Changer, each tenant may choose his favorite temperature without interfering with his neighbor. Only air from the one apartment is recirculated in that particular Climate Changer. There is no chance for odors or air borne disease germs to spread from one apartment to another as would be the case in the ordinary central fan system. Yet one boiler system may supply the requirements of the Climate Changer in every apartment. Only those apartments actually occupied need be supplied.

CONDENSED CAPACITIES FOR LARGEST AND SMALLEST SIZES

HEATING

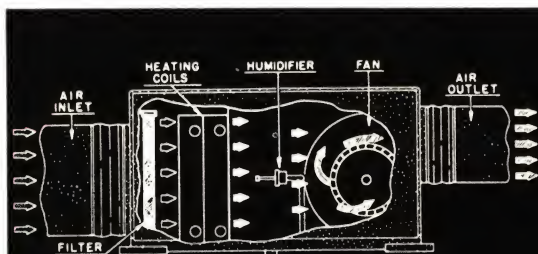
65° Entering Air; 2 lbs. Steam Pressure

UNIT	B.t.u.	C.F.M.
From No. 0.....	33,000	650
to No. 6A.....	360,000	4780

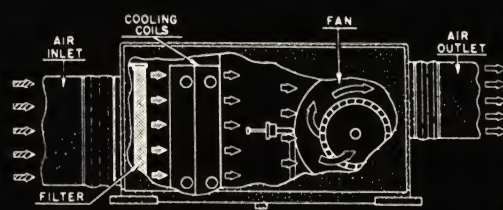
COOLING

85° Entering Air; 50% Relative Humidity

D.E. 40° Gas B.t.u.	Water or Brine 50° B.t.u.
22,000	24,700
131,000	139,500



WINTER CONDITIONING CYCLE STEAM OR HOT WATER BOILER USED AS HEAT GENERATOR.
A - COOL DUSTY AIR FROM ROOMS ENTERS UNIT.
B - AIR HEATED BY HEATING COILS.
C - AIR HEATED BY HEATING COILS.
D - AMPLIFIED MOISTURE ADDED TO AIR BY HUMIDIFIER.
CLEAN, MOIST, WARM AIR DISTRIBUTED TO ROOMS BY CIRCULATING BLOWERS.



SUMMER COOLING CYCLE COLD WATER, ICE OR MECHANICAL REFRIGERATION MAY BE USED.
A - WARM, MOIST, DUSTY AIR ENTERS UNIT.
B - AIR CLEANED BY FILTER.
C - AIR COOLED AND DEHUMIDIFIED BY COILS.
D - CLEAN, COOL AIR DISTRIBUTED TO ROOMS BY CIRCULATING BLOWERS.

HOW IT WORKS

THE TRANE DUAL SYSTEM OF AIR CONDITIONING



A typical basement installation showing Trane Climate Changer, boiler and duct work.

The Trane Dual System has been devised to produce complete air conditioning in certain sections of the home providing heating and humidification only for the remainder. That favorite living room or the bedrooms may be cooled as a refuge against summer heat.

The Trane Climate Changer provides all-year comfort to that part of the home which is selected. The remaining rooms are heated with Trane Convectors. (See page 6.) The Climate Changer and Convectors are supplied with steam or hot water by the same boiler system.

In many locations city or well water cold enough to be used as a refrigerant is obtainable. This cold water may be circulated in the Climate Changer and then used for other domestic purposes such as lawn sprinkling. In this manner cooling is obtained at almost no cost because the water is used for other natural purposes. Heating with the Climate Changer costs no more than with other methods. Winter humidification takes very little additional water. The cost of renewing filters is almost negligible.



of water or high water temperatures do not impair efficiency where the Trane Evaporative Condenser is used.

The Trane Evaporative Condenser is available in two models, Series K and J. The K Series are manufactured for installations requiring unit capacities up to 110 tons. The J Series are compact units with one motor driving the fan and pump for small installations.

The famous Trane Extended Surface Coils, Pumps, Blowers, and Spray Nozzles are used. These products are described elsewhere in this bulletin. The casing is of 12 and 14 gauge, rigidly-braced steel. The larger units are shipped in three sections.

TRANE *Evaporative Condenser*

(Sales Bulletin V42. Data Bulletin V98)

The Trane Evaporative Condenser is used to condense refrigerants in any compressor system. Recirculated spray water absorbs the heat from the condenser coil. In turn, the spray water is cooled by evaporation. All need for cooling towers, tower pumps, and the large amount of space necessary to house such bulky equipment is eliminated. With the use of the Trane Evaporative Condenser, water costs are slashed as much as 95% in comparison with other means of condensing. Only a small amount of water is lost by evaporation. Expensive service lines and the operation of large pumping equipment is not necessary. Power costs are reduced substantially. There is no problem of water disposal, found so often in cities where sewers are already overloaded. Scarcity

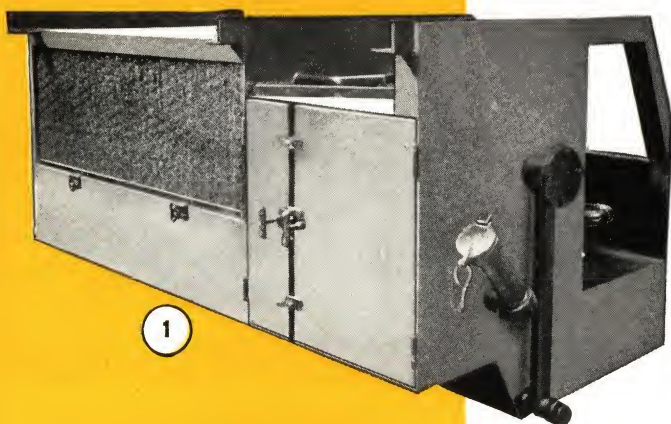
CONDENSED CAPACITIES FOR LARGEST AND SMALLEST SIZES

Entering Air 78° W.B.; 105° Condensing Temp. Freon or Methyl Chloride

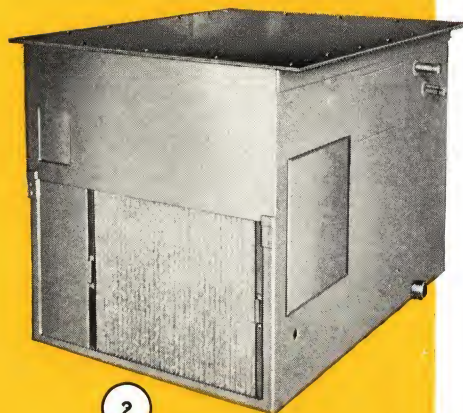
UNIT	B.t.u. per hour
From No. J3.....	36,500
to No. J10.....	130,500
From No. K108.....	171,000
to No. K2410.....	1,245,000

Rounding Out The **TRANE** Line

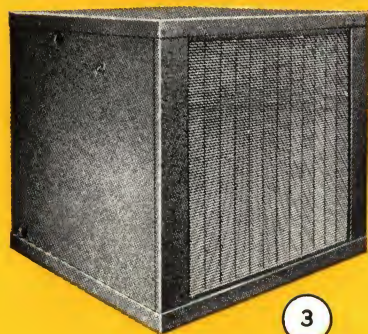
Trane in its long career to control the air in which we live, to regulate its temperature and humidity, to properly circulate that air to its appointed place, has developed a line of outstanding products. The variations for their use are multiple. As new needs arise, new products are developed. On the following pages, a brief description of the products that complete the Trane Line are given.



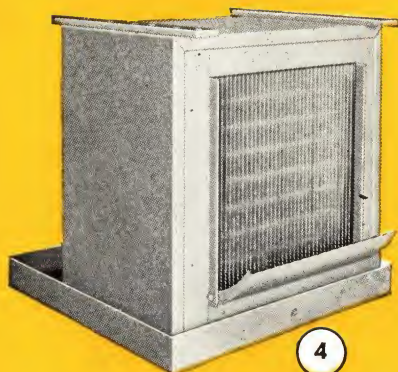
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2



3



4

From top to bottom: (1) The Trane EVR Evaporative Condenser for Railroad Air Conditioning. (2) The Sub-cooler used with Air Condenser equipment to increase efficiency of Railroad Air Conditioning. (3) The Trane Type "X" Propeller Comfort Cooler. (4) The Trane Product Cooler, is used to maintain constant temperatures in food and perishable storage space.

1 TRANE RAILROAD EVR EVAPORATIVE CONDENSERS

Trane has a complete electro-mechanical system of Railway Air Conditioning, including motors, compressors, EVR Condensers, and sub-coolers. In addition, a complete line of floor and suspended air conditioning and cooling units using direct expansion refrigerants or water is available.

An important product is the EVR Evaporative Condenser for under-car installation. When installed on equipment designed for air condensers, increased capacity is assured. The fresh air supply may be increased; cooler conditions maintained; or lower compressor speeds may be obtained. Excess noise and vibration is limited. Condenser coils are of the copper tube and fin type.

2 REFRIGERANT SUB-COOLERS

Trane Refrigerant Sub-Coolers increase the efficiency of air condensers. Power requirements are sharply reduced when installation is made between air condenser coils and receiver. Capacity is increased when installation is made in the liquid line between receiver and expansion valve. Cleaning of Air Filter and Water Filter, and pump inspection are the only maintenance requirements.

3 THE TRANE TYPE X PROPELLER COMFORT COOLER (Bulletin V285)

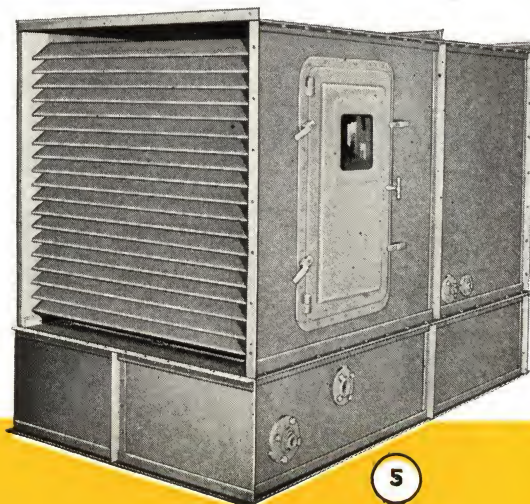
The Trane Type X Propeller Comfort Cooler combines the famous Trane Cooling Coil with the Quiet Trane Fan in a draw-through spot cooler. It is an inexpensive unit, intended primarily for service where water is the cooling medium. It is manufactured in two sizes, the larger of which will accommodate a 6-row cooling coil. The casing is attractively finished in brown kinkle enamel. The Trane Free-Flo Grille directs cool air to the floor line, besides adding neatness to the unit.

4 THE TRANE PRODUCT COOLER (Bulletin V25)

The Trane Product Cooler, a compact, easily-installed unit, provides refrigeration for storage rooms to protect meat, vegetables, dairy products, malts, and other perishables. The unit may be used with the present refrigeration system. The Trane Coil of the unit may be furnished for any standard refrigerant. An ingeniously constructed drain pan prevents damage to stock. Defrosting periods are of short duration.

5 TRANE AIR WASHERS

This unit provides humidification for the average commercial heating and ventilating system. Air passing through the device is washed, purified and humidified. Trane Washer Type Spray Nozzles are used in conjunction with brass flooding nozzles. The same high quality Trane construction is found in this unit. Special metals may be used if required.



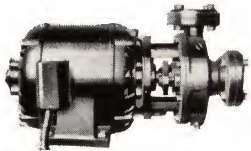
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CONDENSATION PUMPS (Bulletin 33)

Trane Condensation Pumps are furnished on heating systems where condensate will not return to the boiler by gravity. The assembly consists of the following: pump motor, float switch control, receiving tank, piping between pump and tank, companion flanges for suction and discharge, motor protective equipment.



Condensation pumps are available in several styles. The 400 Series has a capacity equivalent to 4000 sq. ft. of direct radiation. The Pedestal Style with 13 gallon tank has a maximum capacity of 10,000 sq. ft. The Pedestal Style with 28 gallon tank has capacity to 40,000 sq. ft. The Duplex Pedestal Style with the same capacity as the Pedestal Style is built with two motors and pumps to be operated singly or together for peak periods.



CIRCULATING AND BOOSTER PUMPS

The Trane Company manufactures three types of Circulating and Booster Pumps. The SSU Model is a vertical split case pump mounted on the motor end plate and connected directly to the motor shaft. The SSC has the same characteristics except the mounting is made on a cast iron base. The pump is connected to power by a flexible coupling. Both models are for jobs requiring not over 250 G.P.M. against heads not exceeding 100 feet.

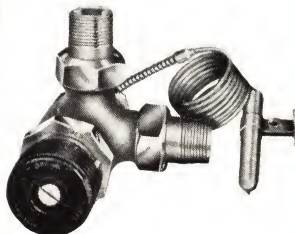
The SK Model is a horizontal split case double suction unit designed for heavy pumping duties. Capacities range from 100 G.P.M. against heads up to 250 feet.

CONDENSED CAPACITIES

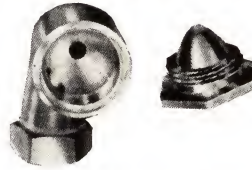
UNIT	Radiation in Square Feet		Max. Pressure At Pump	
	From	To	From	To
Pedestal Tank	6,000	30,000	10 lbs.	60 lbs.
Duplex Pedestal Style			10 lbs.	60 lbs.
400 Series	4,000		10 lbs.	60 lbs.

TEMPERATURE CONTROL VALVES (Bulletin 215)

Designed to maintain any set temperature between 63-77 degrees, they find their greatest use on Convectors or radiators in apartments, hotels, office buildings, hospitals, and dormitories. The control bulb is placed in the entering air path to govern the valve attached to the supply end of the heater. They are planned for use only on vapor or vacuum systems and are highly desirable where fuel savings are important.



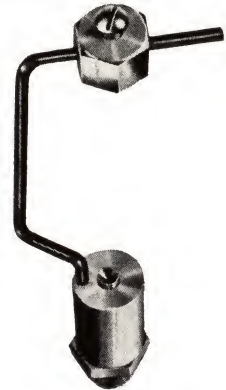
TRANE WASHER TYPE SPRAY NOZZLES



The Washer Type Spray Nozzle develops a fine spray at pressures of from 15 to 20 pounds. Large water passage prevents clogging. Spray head cap is removable. Especially designed for air washer and evaporative condenser use.

TRANE TARGET TYPE SPRAY NOZZLES

The Target Type Spray Nozzle atomizes the water passing through it. At 50 pounds pressure, it requires two gallons of water per hour. A self-cleaning device automatically reams the small orifice when water supply is closed off. Ideal for humidification in any air conditioning application.



TRANE

OVER 70 BRANCH OFFICES

The Trane Company maintains sales and service facilities in principal cities throughout the country. One of these offices is located near you—completely staffed, ready to serve your needs in Heating, Cooling or Air Conditioning.

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Manila, P. I.
Mexico, D. F.
Toronto, Ontario

Available **TRANE LITERATURE**

The Trane Company makes available for the engineer, architect and contractor accurate and inclusive data on Heating, Cooling, and Air Conditioning equipment and applications. The material is in bulletin form, 8½" x 11" size, carefully arranged and profusely illustrated for convenient reference.

HEATING

Bulletin 110—TRANE CONVECTORS

A general bulletin of Convector application information. Design and construction. Typical installations. 24 pages.

Bulletin V205—TECHNICAL DATA ON TRANE CONVECTORS

Models. Designs. Applications to vapor, vacuum, hot water, and one-pipe steam systems. Installation de-

tails. Piping connections. Specifications. Roughing-in dimensions. Capacities. 28 pages.

Bulletin 102—A SIMPLIFIED METHOD OF FIGURING RADIATION

How to figure radiation without the aid of tables. Practical examples. Written for the layman. 4 pages.

Bulletin 65—TRANE AIR-O-LIZERS
Trane Unit Ventilator for school-room heating and ventilating. Operating cycles and features. 8 pages.

Bulletin 284—TRANE PROJECTION UNIT HEATERS

Bulletin 294—TRANE MULTIPLE PROJECTION HEATERS
Revolutionary new draw-through propeller type unit heaters. Construction. Features. Advantages. Trane patented Temperature Equalizing System. Examples of fuel saving. Roughing-in dimensions and capacities. Bulletin 284 covers two and three fan units. Each bulletin 8 pages.

Bulletin 75—TORRIDOR UNIT HEATER BULLETIN

Description. Operation. Sizes. Capacities. Wiring diagrams. Piping details. Application suggestions. Selection data. Roughing-in dimensions. Specifications. 24 pages.

No. V177—TRANE EXTENDED SURFACE COILS

Types "E" and "C" for blast heating and water cooling.

Bulletin V268—TRANE CONVECTORS

Data for jobbers and dealers. Six reasons why Convectors are the ideal heating unit. Installation details, connections, and capacities. 8 pages.

Bulletin 105—TRANE ORIFICE SYSTEM

Advantages. Explanation of low installation and maintenance costs. Applications. 8 pages.

Bulletin V260—TRANE HEATING SPECIALTIES

Construction and operation of traps, valves, vents, and specialties for heating systems and industrial applications. Technical data. Pipe size details. Application suggestions. Roughing-in dimensions. Weights. Capacities. 36 pages.

Bulletin 85—TRANE PROPELLER TYPE CRADLE COIL UNIT HEATERS

Where and how to use. Explanation of Cradle Coil and Floor-Line-Spread. Data on over sixty sizes. How to figure special capacities. Control. Piping and wiring diagrams.

Roughing-in dimensions. Capacities. 16 pages.

Bulletin 152—TRANE EXTENDED SURFACE HEATING COILS

Hot water capacities. Construction. Heating surface and air friction tables. Selection guide. Temperature rise chart. Piping and installation details for high and low pressure systems. Methods of applying automatic temperature control. Pipe sizing. Performance. Specifications. Roughing-in dimensions. Capacities. 40 pages.

COOLING

Bulletin 42—TRANE EVAPORATIVE CONDENSERS

Where and why used. Operation features. Construction details. Dimension and capacity data. 4 pages.

Bulletin V98—TECHNICAL DATA ON EVAPORATIVE CONDENSER

Advantages. How they operate. Construction. Installation and maintenance. Use of capacity tables. Cooling data. Specifications. Roughing-in dimensions. Capacities. 12 pages.

Bulletin 172—TRANE DIRECT EXPANSION COOLING COILS

Complete, accurate data on direct expansion cooling. Design. Selection. Piping details. Header arrangements. Properties of air and water mixtures. Heat content of air data. Trane psychrometric chart. Refrigeration pipe sizes. Roughing-in dimensions. Capacities. 28 pages.

Bulletin V292—TYPE "S" WATER COOLING COILS

Supplement to Bulletin 182. Trane Type "S" Coils. Roughing-in dimensions. 4 pages.

Bulletin 285—TRANE TYPE "X" COMFORT COOLER

Designed for applications where water is used as a refrigerant. For small and medium size jobs. Features and operation. Installation. Roughing-in dimensions. Capacities. 2 pages.

AIR CONDITIONING

Bulletin V234—TECHNICAL DATA ON COMMERCIAL AIR CONDITIONERS

36 pages.

Bulletin V271—TECHNICAL DATA ON DELUXE FLOOR MODEL AIR CONDITIONERS

16 pages.

Bulletin V241—TECHNICAL DATA ON HOTEL AND OFFICE AIR CONDITIONER

12 pages.

The technical aid conditioning bulletins above contain control, duct work details, application suggestions, specifications, roughing-in dimensions and capacities, and valuable general air conditioning data.

Bulletin V239—TRANE AIR CONDITIONING INSTALLATIONS

A host of outstanding Trane Air Conditioning installations. 20 pages.

Bulletin 182—WATER COOLING AND HEATING COILS

Applications of water cooling with examples. Operating cost charts. Coil construction. Heat content of air data. Properties of air and water mixtures. Mean temperature differences. Piping details. Specifications. Roughing-in dimensions. Capacities. 32 pages.

CONTROLS, by C. L. Ringquist

Series of articles assembled in bulletin form. Thorough technical discussion of controls for every phase of air conditioning. Complete tables and engineering examples. Drawings show operation of each control system.

ARTICLES, by William Goodman

Reprints of published articles covering interesting points in air conditioning. (1) "Air Conditioning Problems Solved by Spray Water—Air Chart." (2) "How to Avoid Trouble on Cooling Jobs with Evaporators Above Condenser." (3) "Pumping Head on Air Conditioning Systems Reduced by Using Siphon." (4) "Solving the Four Types of Process Air Conditioning Problems." (5) "How to Solve Heat Transfer Problems." (6) "Dehumidification of Air With Coils." (7) "New Uses for the Psychrometric Chart in Simplifying Air Conditioning Problems."

Bulletin V235—TRANE AIR CONDITIONERS

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